Challenges of Conducting Social Network Surveys for Exploring the Dynamics of Community's Disaster Preparedness Behaviors: Voices from the Fields of Ghana

○Subhajyoti SAMADDAR, Muneta YOKOMATSU and Hirohiko ISHIKAWA

1. Introduction

Recent decades have experienced that structural measures alone are not adequate to reduce disaster risks. In retort to this challenge, adoption of household non-structural measures (example - rainwater harvesting technology for safe drinking water; using flood preventive building materials) are recently set as policy option for better resilient community. As a result, many studies have attempted to examine household adoption behavior in order to formulate strategies to encourage individuals and local communities to adopt risk preventive measures. For last few decades, majority of these studies examines household adoption behaviors from cognitive perspective. Although these studies have considerable contributions in systematically analyze household disaster preparedness behaviors and to formulate refined risk communication strategies, it is also the reality that household disaster preparedness remains elusive and the planners and practitioners who are at the sites are still struggling to get appropriate strategies to encourage households to adopt innovative ideas and technologies. Realizing this gap, many researchers and scientific groups have become interested to investigate household risk preventive behavior from the perspective of social network analysis, which, unlike cognitive approach, provides a more social and collective perspective of the human behaviors. For example, social network study argues that individuals hardly make decisions in social isolation, rather they discuss, receive suggestions, and share problems in the due course of adoption decision. Social intimacy, frequency of interaction, group affiliations, cultural practices and customs all are considered to be intrinsically connected with individual's disaster preparedness behaviors. With this recognition of potential importance social network analysis in predicting household disaster preparedness behavior, there is a growing trend to conduct social network field surveys and data collection for obtaining empirical validation of the claims and propositions. However, the social network data differ at great extent from standard social and behavioral science data. Hence, the process, techniques and art of social network data collection are also very unique and challenging. Researchers who are engaged in obtaining this social network data are often challenged. There is not much literature or documents that extensively deal with the real life problem of conducting social network data, especially in disaster risk management. Therefore, in this study, we would describe some issues, challenges and possible opportunities experienced while conducting in-depth social networks survey in climate changed affected villages Northern Ghana. The insights from this study would enrich researcher's understanding in conducting social networks and to impediments to carry out this survey techniques.

2. Characteristics of Social Network Data and Method – An Overview

There are many ways, social network data are unique. Unlike other methods, the social network analysis consider relation between pairs of actors instead of personal attributes of actors. Social networks data include two types of variables – Structural variables and Compositional variables. Structural variables include connections between specific kinds of connection between actors. Whereas, Compositional variables quantify actors' attributes. In this study we will focus more on structural variables. Structural variables measured on a single set of actors, such as opinion partners of individuals, give rise to one-mode networks. The one-mode networks is considered as the most common type of networks. Structural variables can be also measured on two or more sets of entities,

such as actors of different countries can comprise different sets of entities. Generally, the unit of observation is an actor from whom researchers elicit information about interpersonal connections. Social network data could be directional and non-directional. In a directional ties, the tie has an origin and destination between a set of actors. In a non-directional relation, the tie between a pair of actors does not have a direction. Field techniques methods used for social network data are numerous, some of the popular methods are – questioners, interviews, observations, secondary records or ego-centered techniques.

3. Field Study Area: Climate Change Affected Northern Ghana

Social network surveys were conducted in four adjacent village communities, namely Chietanga, Bankpama, Zowayelli and Baleufilli in Wa-West District in Upper-West Region of Northern Ghana for case studies. Northern Ghana is within the West Africa climatic zone and considered to be extremely vulnerable to climate change induced risks. The region experiences severe floods and droughts simultaneously. Over the past three decades, the region has experienced 1°C rise in temperature and 20 percent reduction in rainfall. . In the past 10 years, the region has experienced two catastrophic floods, in 2007 and 2008. The increasing disaster risks due to climate change in the region are directly affecting the livelihoods of people who are already under abject poverty and characterized as self-subsistence, labor intensive, rain-fed agricultural economy.

3. Major Findings

In this study, we have conducted social network survey to understand how household risk perception and disaster preparedness intention are linked with nature and structure of various interpersonal connections. Three types of social network data were collected – friendship, discussion or opinion partners and available interpersonal networks during emergency. We have used two survey methods – interview and observation. We have following critical findings and observations in order to systematically conducting this social network survey –

(1) Boundary setting and Population: Often the geographical boundary of two villages overlapped, therefore, it was critical to demarcate the population. In order to solve the problem we used snowball sampling.

(2) Privacy of Respondents: It is often found that the respondents are reluctant to disclose their personal networks, such as close friends and opinion partners in front of other co-villagers. So it was critical to conduct the survey in social isolation where the personal information of the respondent will not be disclosed.

(3) Identification of network: We used snow¥ball sampling, but in often case, it was difficult to locate the referred network partners of the ego or respondents. In this region, one person has different names. We used two techniques – asking respondent to show his network partners' residence or to get help from the village leaders to find the person.

(4) Availability of respondents: As most of the respondents are farmers, availability of the prospective respondents was always an issue. We conducted survey in the early morning or visited the prospective person as his work place.

(5) Nature of networks: One type of social networks have different dimensions. For example, discussion partner may vary when it is at individual level and when it is at household level. The definition of network has also different dimension from individual to individual.

(6) Definition of household: In many cases, households are structurally joint, but functionally nuclear. In such situation, when respondents were asked to name network person outside the household, may referred kinship members or extended family members who share one consumption unit , but in reality they are different decision making unity.

(7) Langue : Using interpreter is one option to overcome language barrier, it is closely related with privacy issue and in many case the dimension and meaning of specific interpersonal tie varies from one language to another.